

FIG. 1

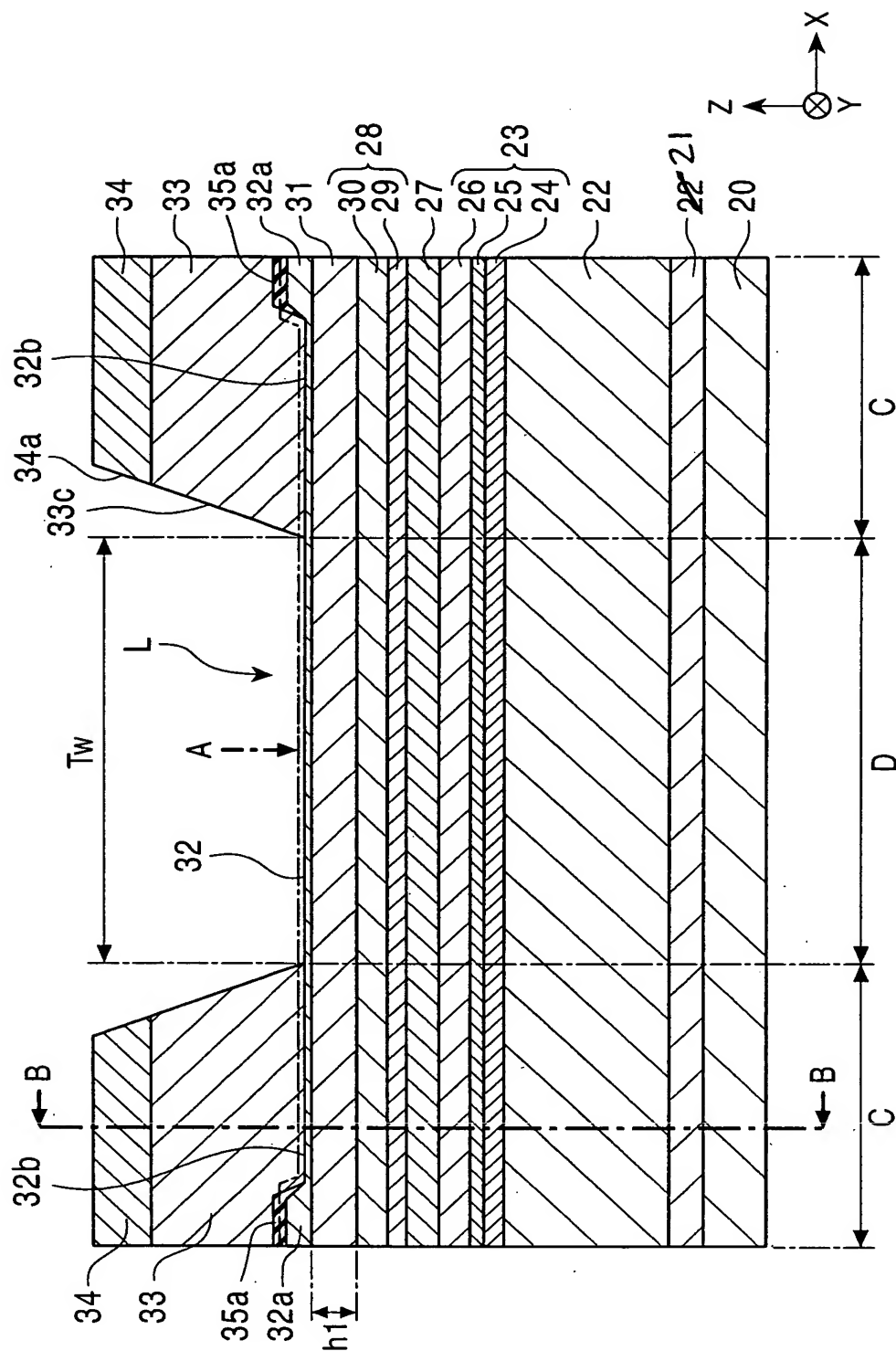
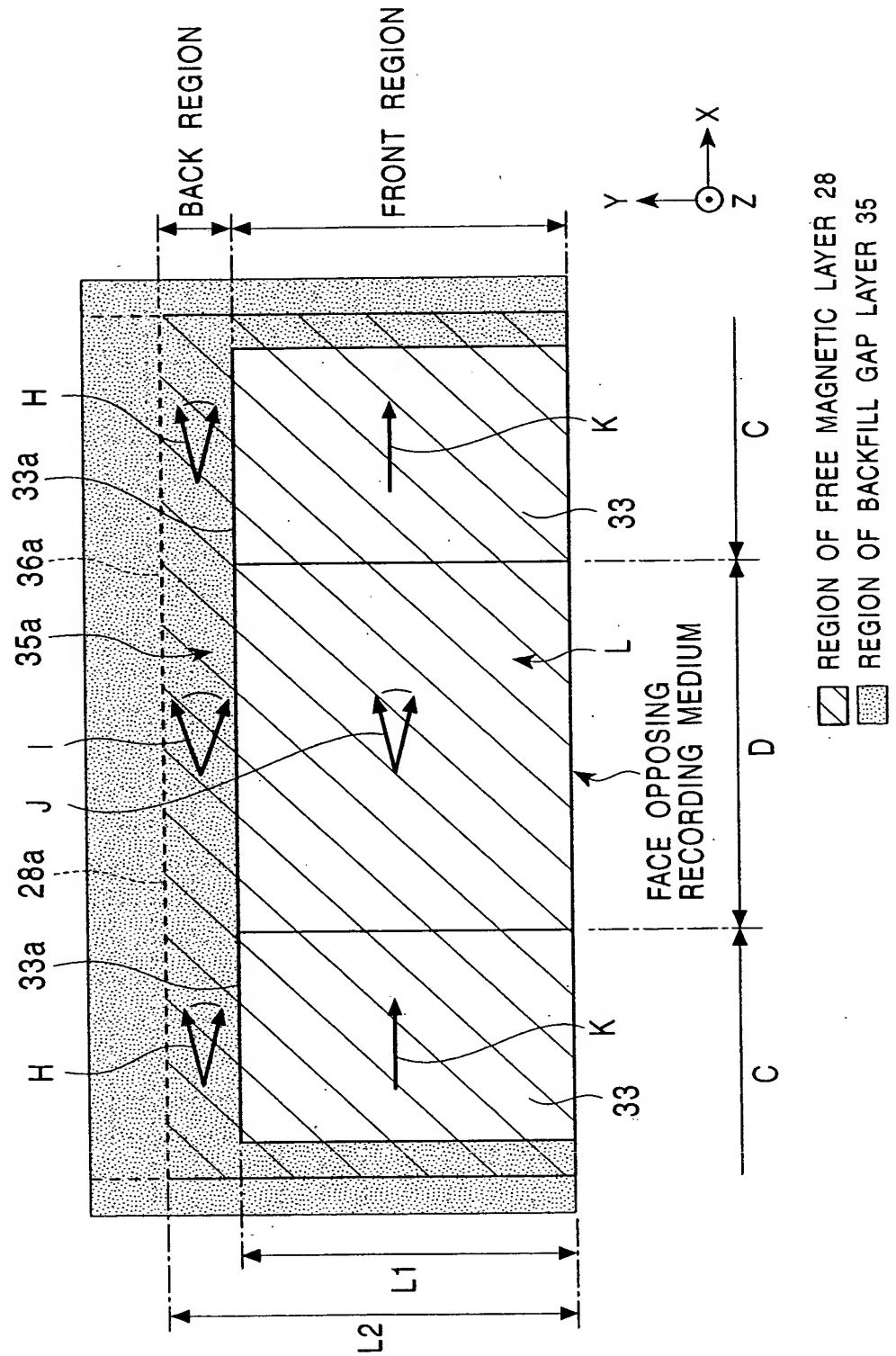
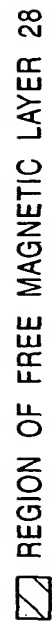


FIG. 2



This diagram shows a cross-sectional view of a magnetic recording medium. The medium is divided into a **FRONT REGION** and a **BACK REGION** by a vertical dashed line. The **FRONT REGION** contains a stack of layers labeled 30, 29, 27, 26, 25, and 24, which are collectively labeled 28. Below these layers is a substrate labeled 23. The **BACK REGION** contains a stack of layers labeled 22, 21, 36a, and 20, which are collectively labeled 21. A **FACE OPPOSING RECORDING MEDIUM** is indicated on the left side. The top surface of the medium is labeled 32, and the bottom surface is labeled 36. The top surface of the back region is labeled 32a, and the bottom surface of the back region is labeled 32b. The top surface of the front region is labeled 33a, and the bottom surface of the front region is labeled 33b. A coordinate system is shown at the bottom right with Z, Y, and X axes.

FIG. 4



A cross-sectional diagram of a recording medium assembly. The assembly consists of several layers: a top layer 34 with diagonal hatching; a layer 33 with diagonal hatching; a thin layer 32; a layer 31 with horizontal hatching; and a bottom layer 30 with diagonal hatching. A central region 28 contains multiple horizontal layers with different hatching patterns. To the right, a wedge-shaped region 28a is shown, bounded by a curved surface 35. A vertical line 33a separates the main body from the wedge. At the bottom, a series of labels 30, 29, 27, 26, 25, 24 are grouped under bracket 28, and labels 22, 21, 20 are shown further right. A coordinate system at the bottom right shows Z pointing up, Y pointing right, and X pointing out of the page (indicated by a circle with a dot). The left edge is labeled "FACE OPPOSING RECORDING MEDIUM".

6 / 19

FIG. 6

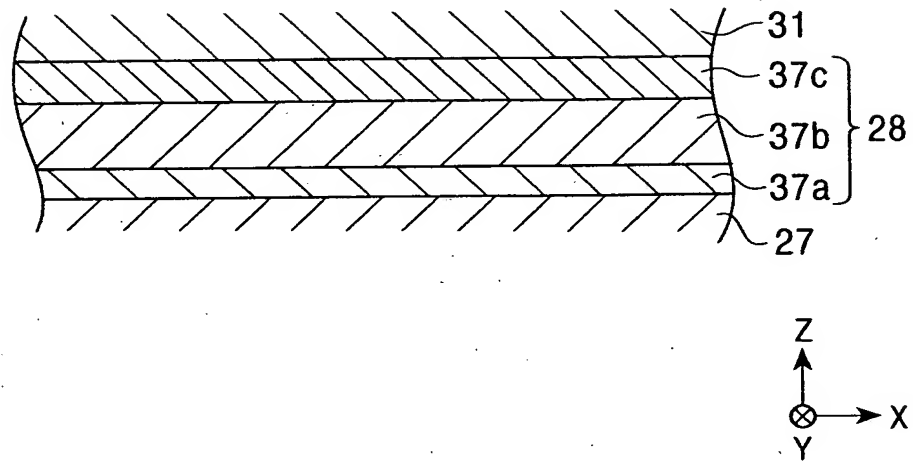
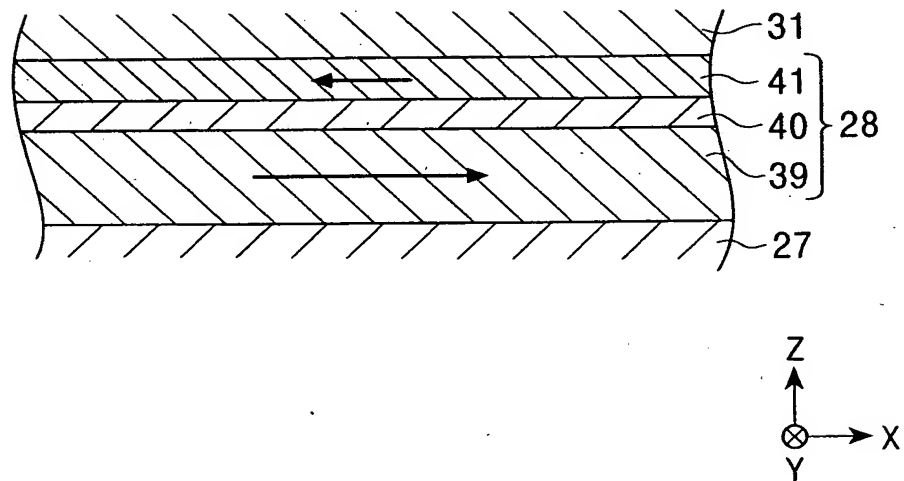


FIG. 7



7 / 19

FIG. 8

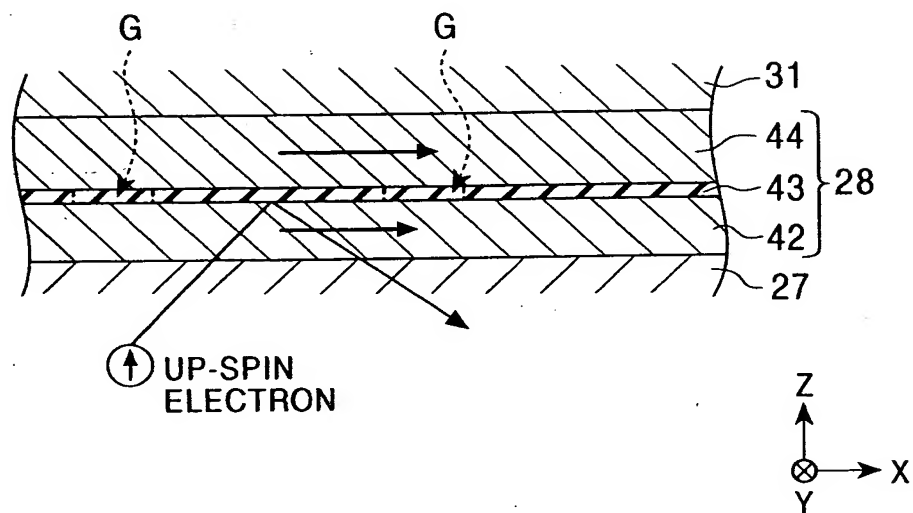
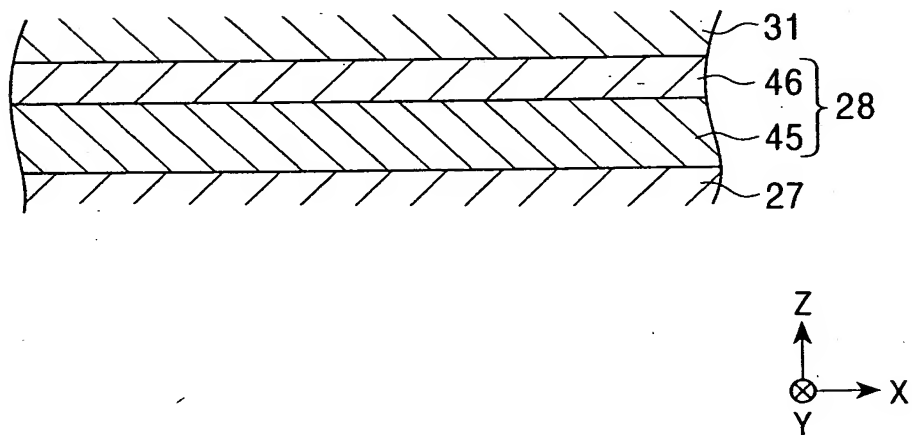
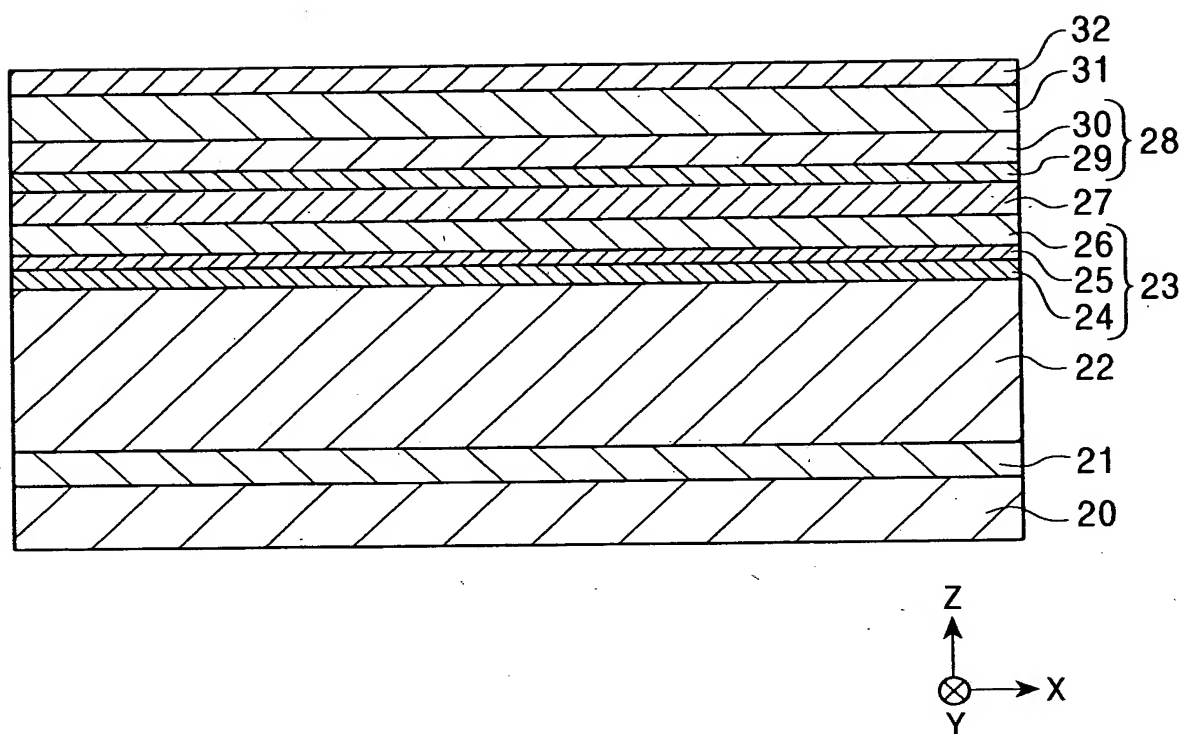


FIG. 9



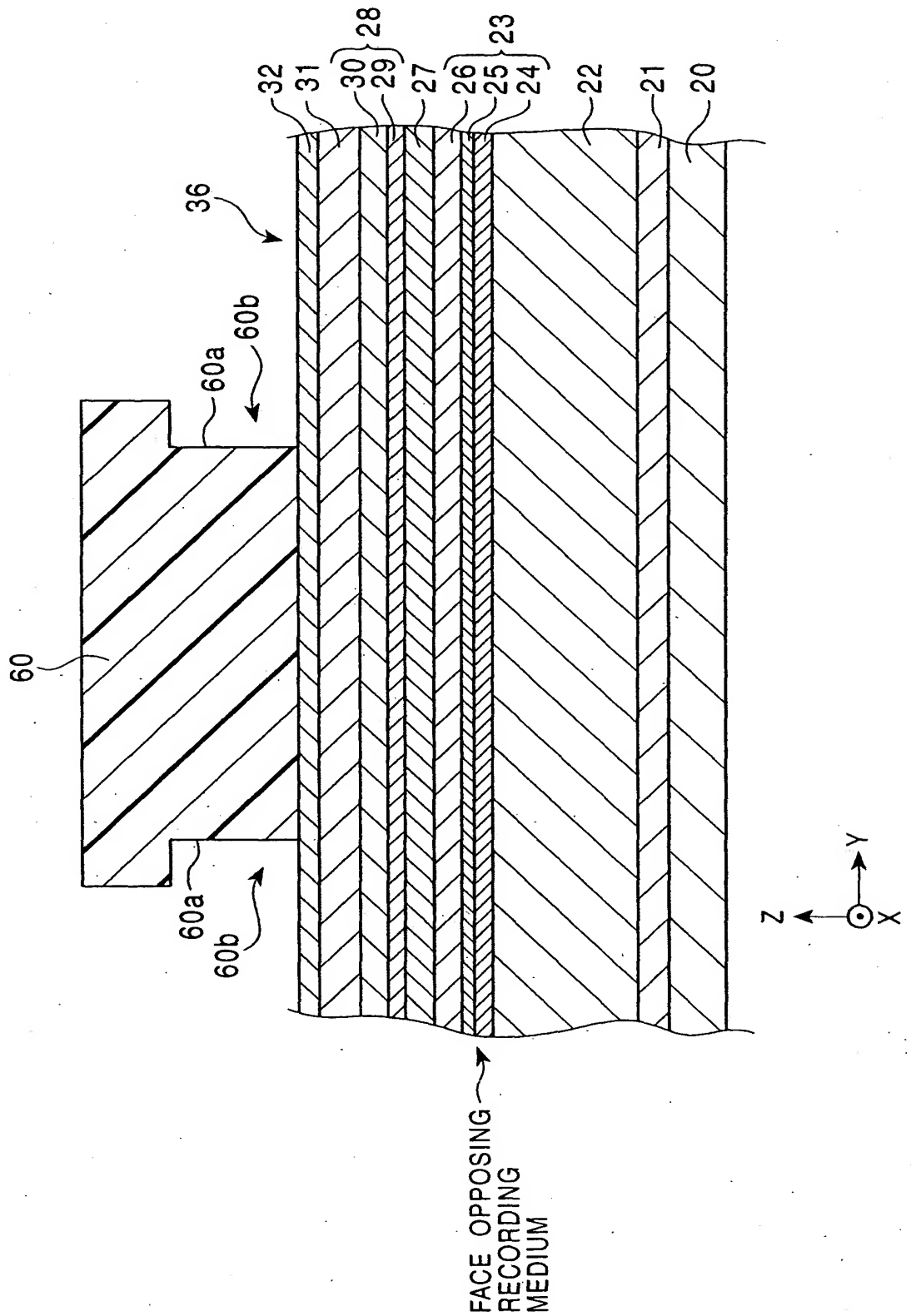
8 / 19

FIG. 10



9 / 19

FIG. 11



10 / 19

FIG. 12

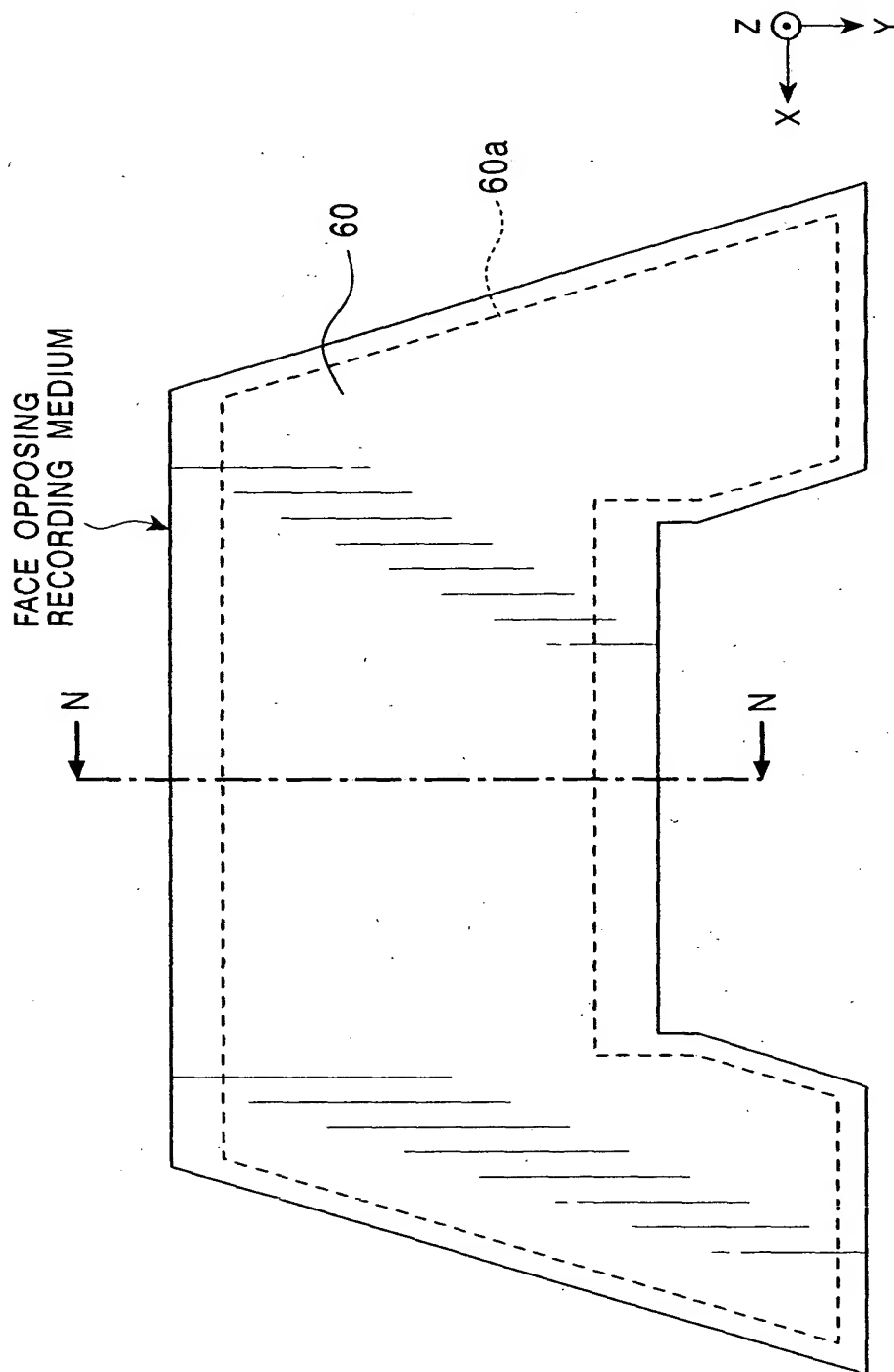
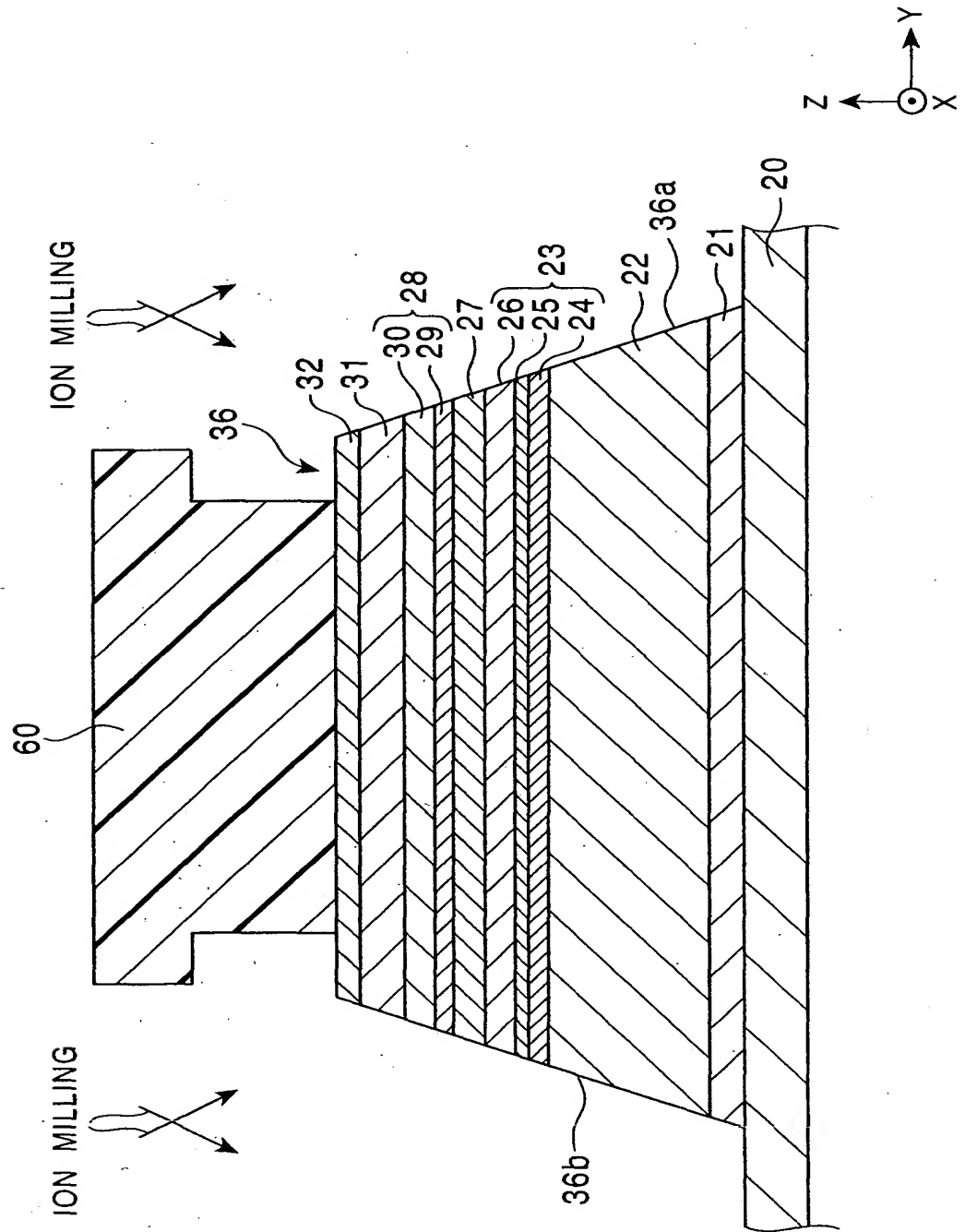


FIG. 13

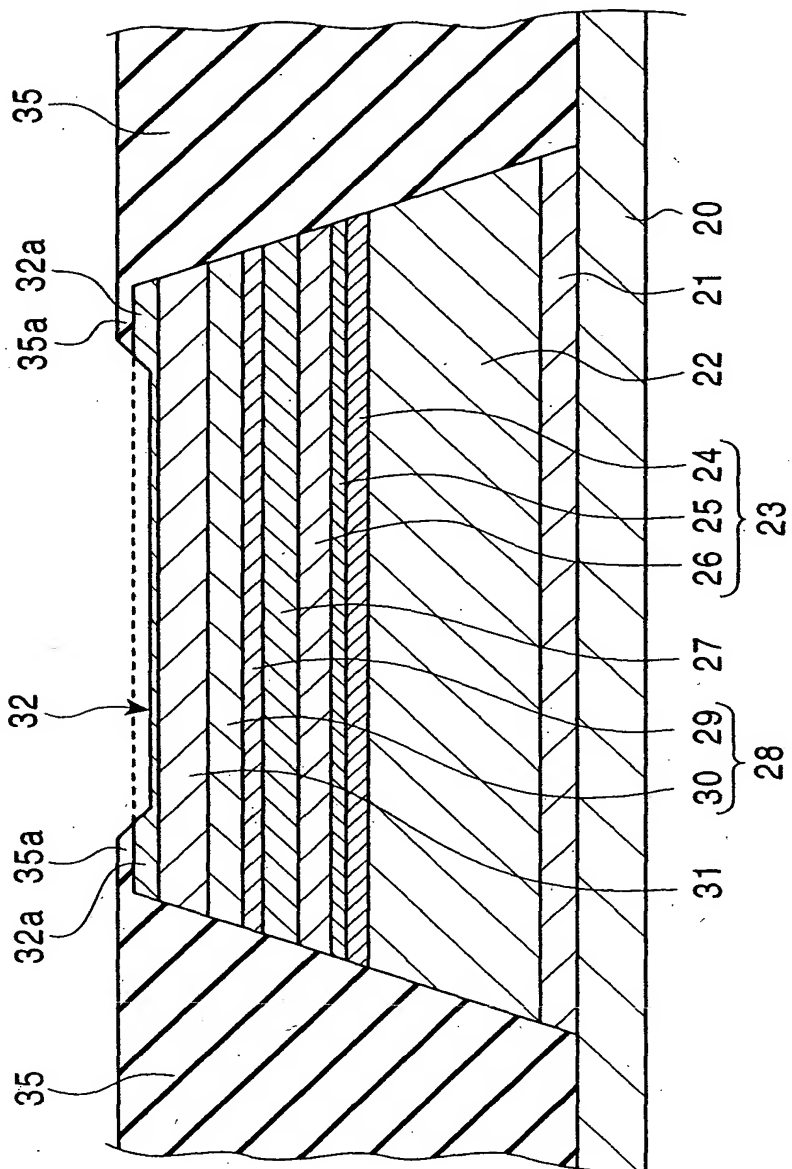
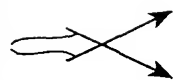


This diagram shows a cross-sectional view of a semiconductor device. The substrate 20 consists of several layers: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. The sputtering direction is indicated by an arrow pointing towards the substrate. The angle of sputtering is labeled θ_1 . The thickness of the substrate is labeled T1. The thickness of the layer 35 is labeled T2. The thickness of the layer 36 is labeled T3. The thickness of the layer 37 is labeled T4. The thickness of the layer 38 is labeled T5. The thickness of the layer 39 is labeled T6. The thickness of the layer 40 is labeled T7. The thickness of the layer 41 is labeled T8. The thickness of the layer 42 is labeled T9. The thickness of the layer 43 is labeled T10. The thickness of the layer 44 is labeled T11. The thickness of the layer 45 is labeled T12. The thickness of the layer 46 is labeled T13. The thickness of the layer 47 is labeled T14. The thickness of the layer 48 is labeled T15. The thickness of the layer 49 is labeled T16. The thickness of the layer 50 is labeled T17. The thickness of the layer 51 is labeled T18. The thickness of the layer 52 is labeled T19. The thickness of the layer 53 is labeled T20. The thickness of the layer 54 is labeled T21. The thickness of the layer 55 is labeled T22. The thickness of the layer 56 is labeled T23. The thickness of the layer 57 is labeled T24. The thickness of the layer 58 is labeled T25. The thickness of the layer 59 is labeled T26. The thickness of the layer 60 is labeled T27. The thickness of the layer 61 is labeled T28. The thickness of the layer 62 is labeled T29. The thickness of the layer 63 is labeled T30. The thickness of the layer 64 is labeled T31. The thickness of the layer 65 is labeled T32. The thickness of the layer 66 is labeled T33. The thickness of the layer 67 is labeled T34. The thickness of the layer 68 is labeled T35. The thickness of the layer 69 is labeled T36. The thickness of the layer 70 is labeled T37. The thickness of the layer 71 is labeled T38. The thickness of the layer 72 is labeled T39. The thickness of the layer 73 is labeled T40. The thickness of the layer 74 is labeled T41. The thickness of the layer 75 is labeled T42. The thickness of the layer 76 is labeled T43. The thickness of the layer 77 is labeled T44. The thickness of the layer 78 is labeled T45. The thickness of the layer 79 is labeled T46. The thickness of the layer 80 is labeled T47. The thickness of the layer 81 is labeled T48. The thickness of the layer 82 is labeled T49. The thickness of the layer 83 is labeled T50. The thickness of the layer 84 is labeled T51. The thickness of the layer 85 is labeled T52. The thickness of the layer 86 is labeled T53. The thickness of the layer 87 is labeled T54. The thickness of the layer 88 is labeled T55. The thickness of the layer 89 is labeled T56. The thickness of the layer 90 is labeled T57. The thickness of the layer 91 is labeled T58. The thickness of the layer 92 is labeled T59. The thickness of the layer 93 is labeled T60. The thickness of the layer 94 is labeled T61. The thickness of the layer 95 is labeled T62. The thickness of the layer 96 is labeled T63. The thickness of the layer 97 is labeled T64. The thickness of the layer 98 is labeled T65. The thickness of the layer 99 is labeled T66. The thickness of the layer 100 is labeled T67.

13 / 19

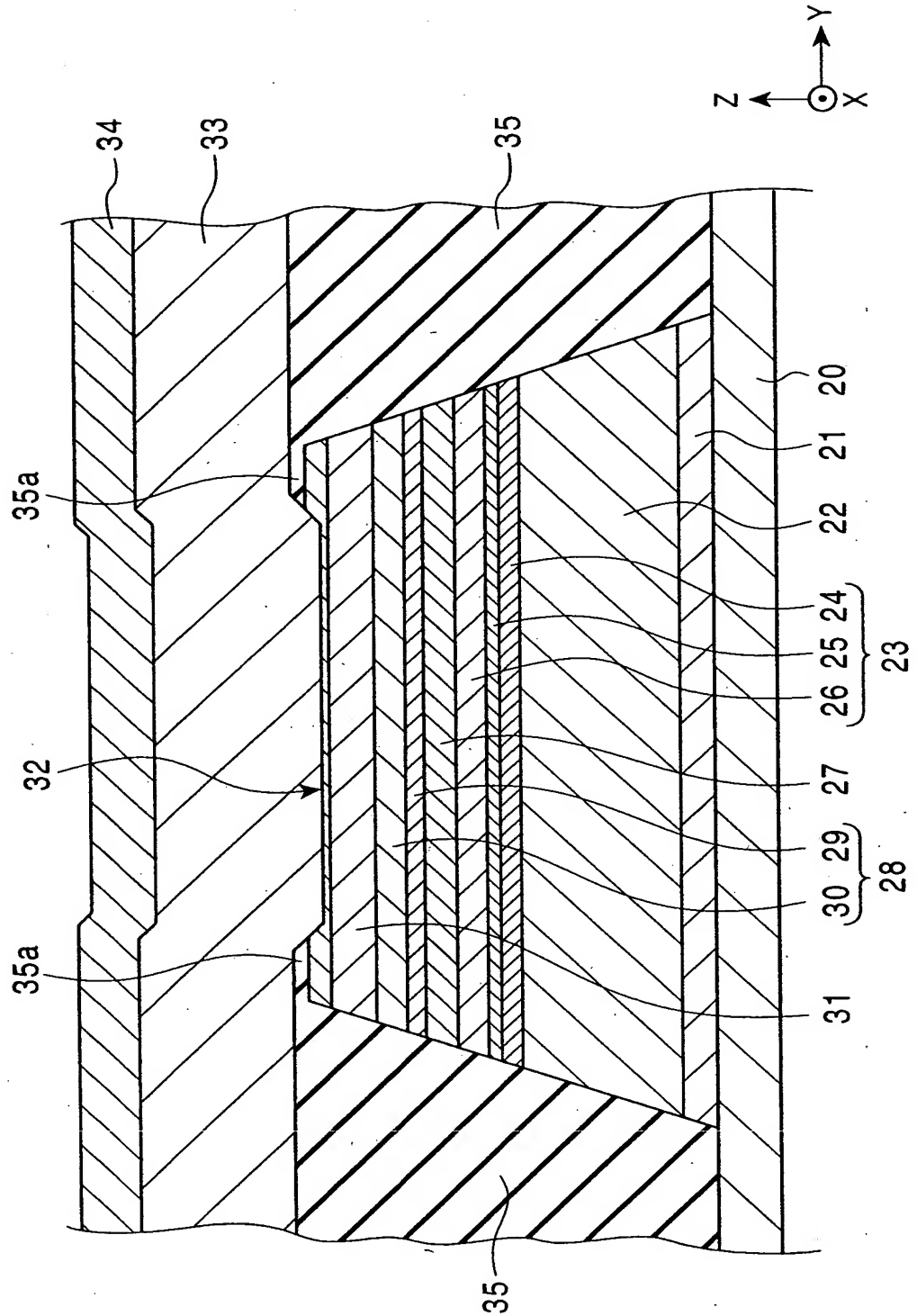
FIG. 15

ION MILLING



14 / 19

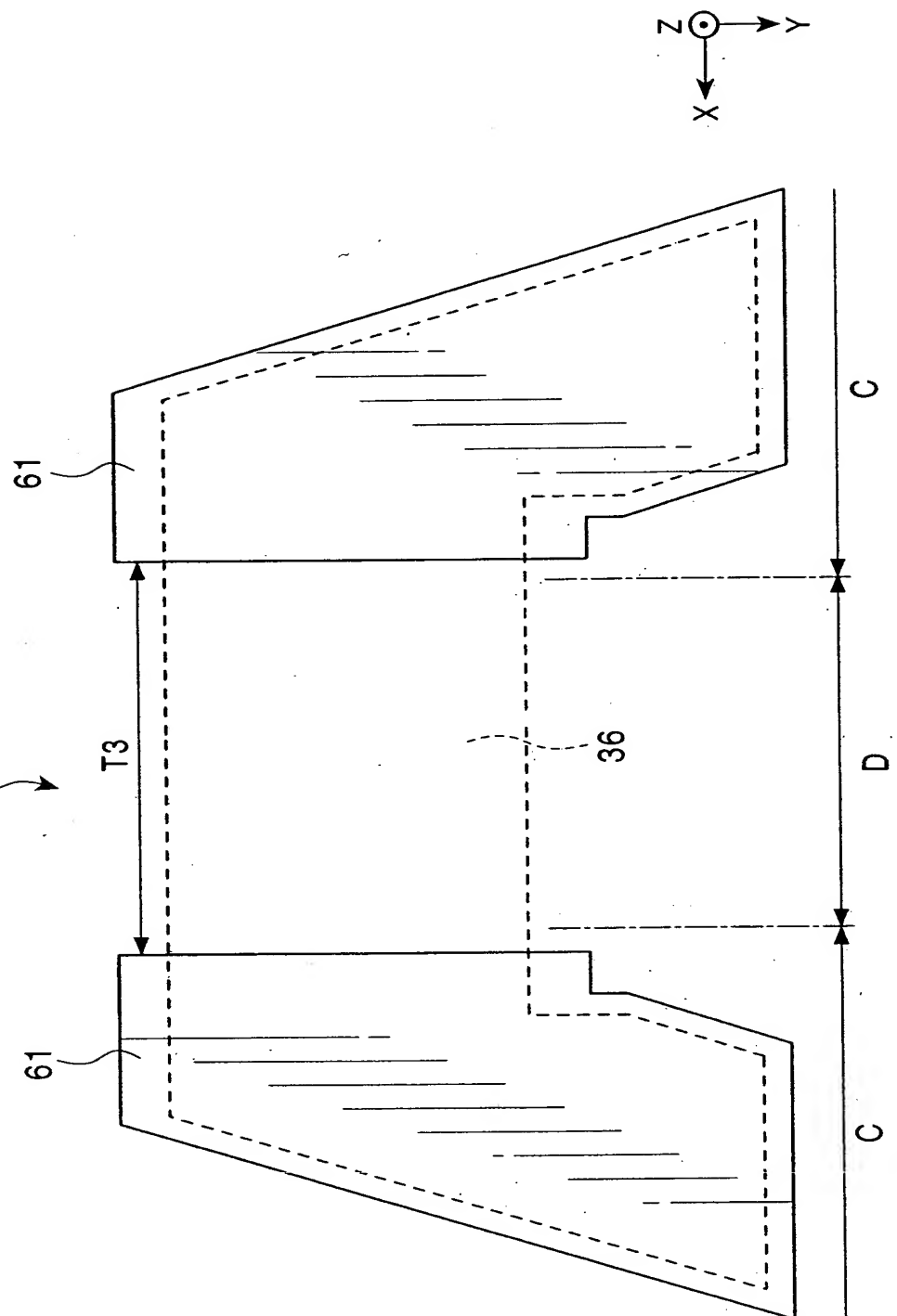
FIG. 16



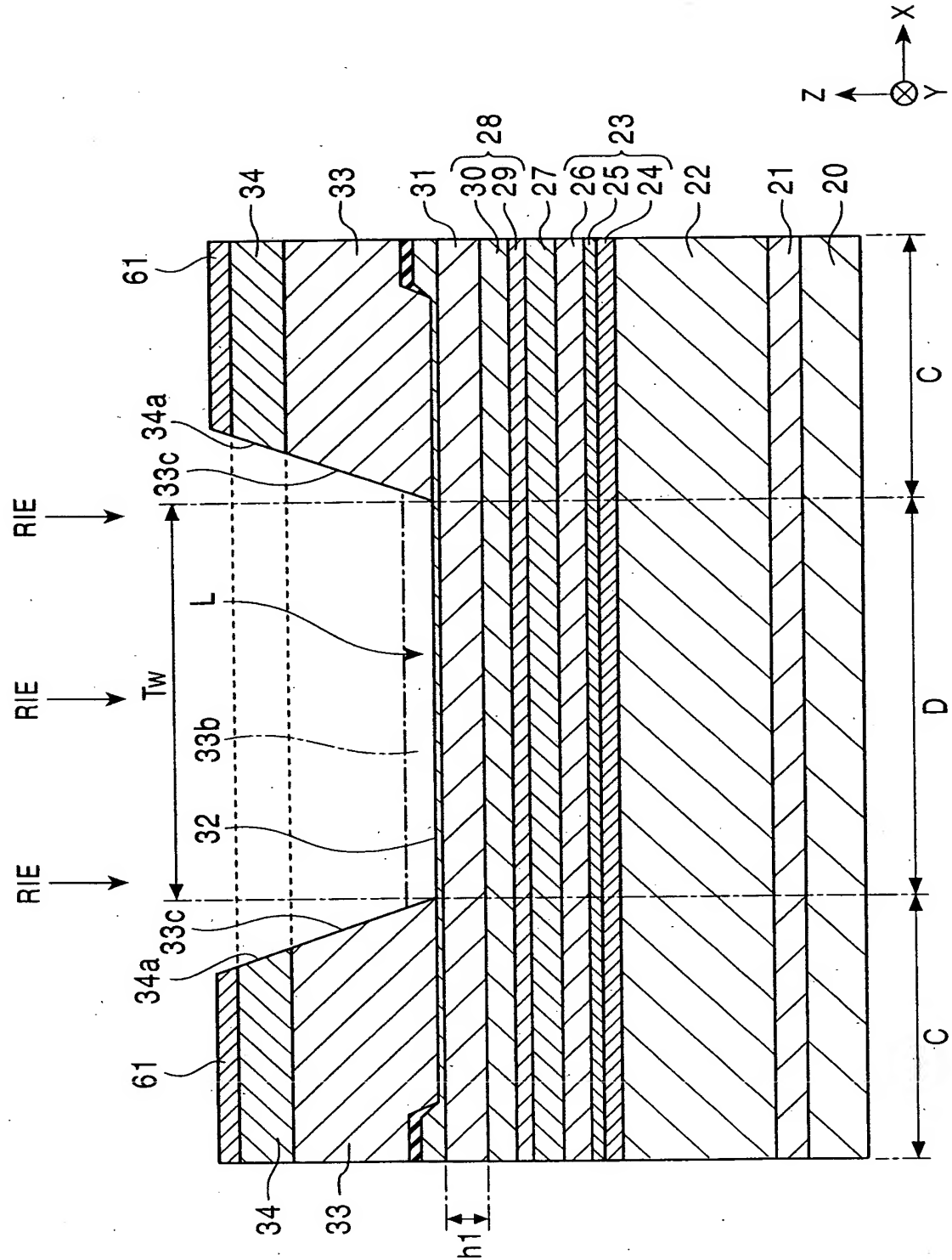
15 / 19

FIG. 17

FACE OPPOSING
 RECORDING MEDIUM



F/G. 18



18 / 19

FIG. 20
 PRIOR ART

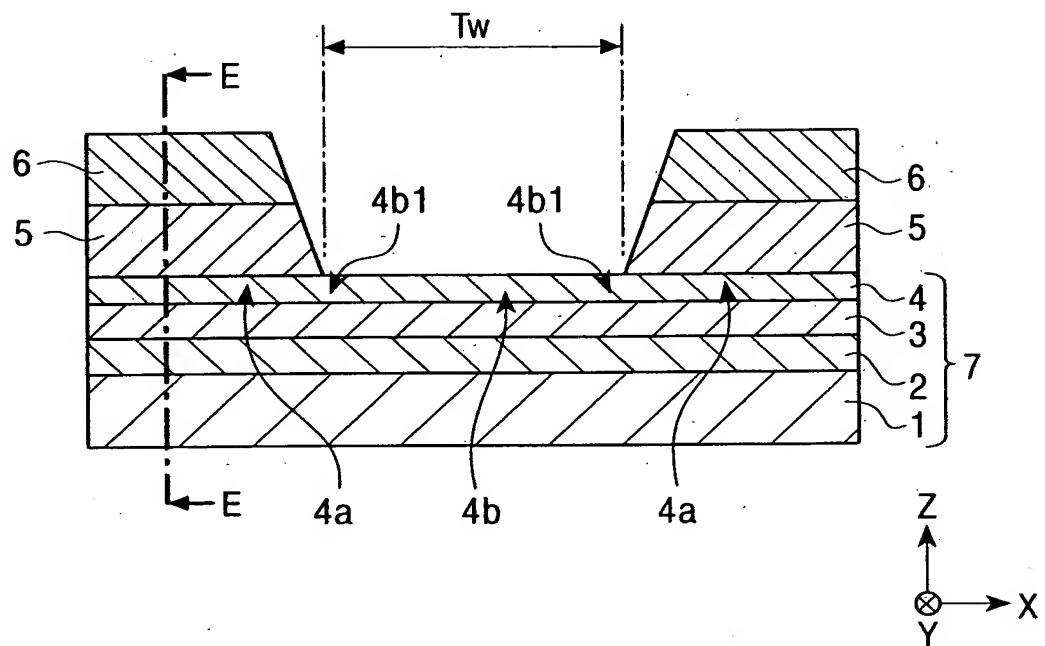
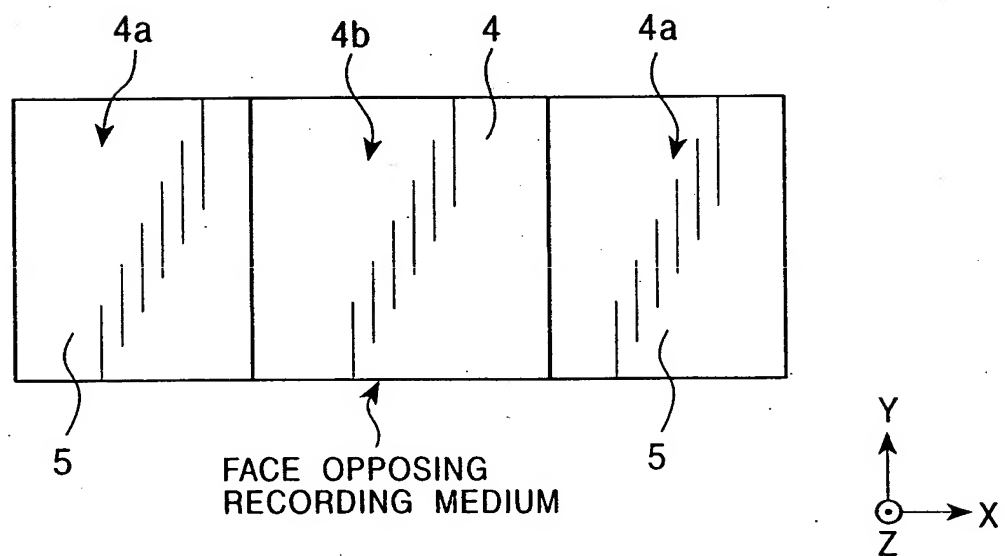


FIG. 21
 PRIOR ART



19 / 19

FIG. 22
PRIOR ART

